

ABSTRACT

The invention provides apparatus and methods for monitoring and controlling hydrocarbon production wells and/or injection wells from a remote location. The apparatus for monitoring and controlling one or more hydrocarbon production wells or injection wells from a remote location comprises one or more surface control and data acquisition systems; one or more sensors disposed in communication with the one or more control and data acquisition systems; one or more downhole flow control devices disposed in communication with the one or more control and data acquisition systems; and one or more remote controllers disposed in communication with the one or more control and data acquisition systems. Preferably, the remote controller comprises a computer having an internet access disposed in communication with the one or more control and data acquisition systems through a communication device comprising an internet web site server. The method for monitoring and controlling a downhole hydrocarbon production well or an injection well comprises: transmitting data collected by a downhole sensor module to a control and data acquisition system; evaluating downhole operating conditions and optimizing downhole operating parameters utilizing an optimization software program disposed in communication with the control and data acquisition system; and transmitting signals between the control and data acquisition system system and a remote controller utilizing a satellite communication system, the remote controller comprising a computer and an internet browser control access adapted to display operating conditions and parameters and to accept instructions to change operating parameters.